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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Appellant(s):  Alexander Conrad et al.

MAILED

——Clifford A Poff——
 For Appellant

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GROUP 2200

15              EXAMINER'S ANSWER

This is in response to appellant's brief on appeal filed 1-
16-97.

*(1) Real Party in Interest*

A statement identifying the real party in interest is

20      contained in the brief.

*(2) Related Appeals and Interferences*

A statement identifying the related appeals and

interferences which will directly affect or be directly affected

by or have a bearing on the decision in the pending appeal is

25      contained in the brief.  This statement indicates that there are

no related appeals and interferences.

**(3)** *Status of claims*

The statement of the status of claims contained in the brief

is correct.

30      **(4)** *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5)  *Summary of invention***

The summary of invention contained in the brief is correct.

**(6)  *Issues***

The appellant's statement of the issues in the brief is correct.

**(7)  *Grouping of claims***

The rejection of claims 49-50 and 53-65 stand or fall together in the following groups because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof.  See 37 CFR 1.162(c)(5).

The rejection of claims 51-52 stand or fall together in the following groups because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof.  See 37 CFR 1.162(c)(5).

The rejection of claims 66-71 stand or fall together in the following groups because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof.  See 37 CFR 1.162(c)(5).

Applicant's statement regarding grouping agrees that the claims stand or fall together in the three groups listed above.

**(8)  *Claims appealed***

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9)** *Prior Art of record*

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

| Number | Name | Date |
|--------|------|------|
| 4,990,892 | GUEST et al. | 5-1991 |
| 5,363,425 | MUFTI et al. | 11-1994 |
| 3,403,381 | HANER | 9-1968 |
| 5,206,637 | WARREN | 4-1993 |

"Understanding Data Communication," Radio Shack, pp 5-2 and 5-12 to 5-15, copyright 1984.

**(10)** *New prior art*

No new prior art has been applied in this examiner's answer.

**(11)** *Grounds of rejection*

The following ground(s) of rejection are applicable to the appealed claims.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

1.    Claims 49-50, 53-55, 57-65, 67, and 69-70 are rejected under 35 U.S.C. § 103 as being unpatentable over US Patent No. 4,990,892 (Guest) in combination with US Patent No. 5,363,425 (Mufti) and US Patent No. 3,403,381 (Haner).

Guest discloses a personnel locating system with transmitters sending bursts to receivers at distinct burst periods to prevent synchronization. Each transmitter uses a different or divers period. The transmitters can be carried by people in order to locate them which is all that is required by

the claiming of person, animal, or equipment in an alternative

manner. Each transmitter uses a different or divers period. The

transmitters can be carried by people in order to locate them

which is all that is required by the claiming of person, animal,

5      or equipment in an alternative manner. Each transmitter in Guest

sends at specified periods rather than the varying intervals of

claim 49. Guest does not specify using an algorithm.

Mufti discloses an analogous art identification system which

includes transmitters having microcontrollers which are provided

10     with software or algorithms to provide the transmitter functions.

Haner discloses a system directed to preventing

interferences between transmitters similar to Guest, but uses

randomly varying repetition times rather than fixed times.

Regarding claims 49 and 65, it would have been obvious to

15     one of ordinary skill in the art at the time the invention was

made to have provided the functions of the Guest transmitter in

response to an algorithm or software as described by Mufti since

a software programmable device is easier and cheaper to mass

produce and provides flexibility because the software can be

20     modified to provide different functions. Alternatively, The

transmitter in Mufti could have been modified to send infrared

bursts as described by Guest which have advantages over RF

transmission such as not requiring FCC licensing. It further

would have been obvious to have included randomly specifying the

25     transmission intervals as described by Haner which is

advantageous for reducing interference when the number of

transmitters is so large that they cannot each be assigned to a

separate transmission interval.  It would have been obvious to

have specified the random period by an algorithm since the random

pulses generator of Haner outputs a pulse at random times which

5       is a representation of a random number provided by a randomizing

algorithm and further because Mufti suggest using software or

algorithms to provide all the transmitter operating functions

(col. 7, lines 4-9) and Mufti describes random intervals for the

burst transmission in col. 8, lines 1-3.

10          Regarding claim 50, Mufti discloses a microcontroller (61)

responding to software or algorithms as discussed above.

Regarding claim 53, Guest discloses a unique sixteen bit

binary codeword in col. 2, line 20, and it would have been an

obvious design choice to extend this to any number of binary

15      bits, such as 20 bits, in order to allow additional unique IDs

for additional transmitter units up to 2 raised to the 20th power

= 1048576 units.

Regarding claim 54, the 20 millisecond burst is an obvious

design choice which is suggested by the 55 millisecond burst

20      period of Guest (cols. 8-9) which is at least of the same

magnitude.

Regarding claim 55, the random intervals of Haner is between

.5 and 1.5 seconds which would amount to an average interval of

about one second.

25          Regarding claim 57, Guest includes a transmission of two

infrared pulses of 5 microsecond duration for a total

transmission (high level) of 10 microseconds in col. 9, lines 50-52) which at least suggest a 10 microsecond flash.

Regarding claim 58, a plurality of receivers with allowable reception range overlap is described in col. 5, lines 1-26 of

5  Guest, and  Mufti includes validation aided by a CRC as discussed above.

Regarding claims 59-60, Guest includes an up to date registry and detecting presence and continued present in col. 3, lines 9-24 which corresponds to validating IDs and forming start

10  and stop events when detected and lost.

Regarding claim 61, Guest includes connections between the central computer (44) and the gathering means (34) and it would have been obvious for these to include a plurality of serial ports since such is commonplace in the computer art.

15  Regarding claim 62, a terminal and keyboard for accessing data are commonplace in the art and are typically provided by a PC or workstation such as the workstation (18) of Mufti discussed in col. 5, lines 28-42 for accessing database (17).

Regarding claim 63, a display means for indicating reports

20  stored at a central computer is commonplace in the computer art and is provided by the workstation of Mufti discussed above and/or the registry discussed in col. 3, lines 1-35 of Guest.

Regarding claim 64, Guest includes a hospital environment with communication to existing nurse stations as discussed in

25  col. 3, lines 9-21 and col. 10, line 66 - col. 11, line 15.

Regarding claim 67, Mufti discloses a CRC error correction

word discussed above.

Regarding claim 69, the CRC of Mufti is considered to be a binary checksum.

Regarding claim 70, the receiver of Mufti validates the CRC (col. 8, lines 59-60), and it is commonplace to validate the CRC by recalculating and comparing the CRC values.

2.   Claims 49-65, and 66-71 are rejected under 35 U.S.C. § 103 as being unpatentable over US Patent No. 4,990,892 (Guest) in combination with US Patent No. 5,363,425 (Mufti) and US Patent No. 3,403,381 (Haner) as applied above to claims 1, 49-50, 53-55, 57-65, 67 and 69-70 and further in view of US Patent No. 5,206,637 (Warren).

Regarding claims 49-50, 53-55, 57-65, 67 and 69-70 if the algorithm limitation is interpreted to required a microcontroller with memory and microcode, then Warren suggests that such is obvious for the reasons stated below.

Regarding claim 51, Guest, Mufti, and Haner include unique ID's or addresses for the transmitters, and Mufti includes a microcontroller in the transmitter, but Mufti does not specify that the microcontroller includes a memory containing the unique address.  Warren discloses an access system with a microcontroller connected to a memory for storing access codes.  See col. 4, lines 46-54.  It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included the ID stored in memory associated with the microcontroller as taught by Warren in the combination applied

above since this would provide flexible (programmable) ID

storage, and it further would have been obvious for this memory

to be inside the microcontroller since making elements

integral/separable and change in location of parts has been

5      established to be obvious by case law.

Regarding claim 52, Mufti describes that the software

instructions of the microcontroller provides for generations of a

signal as shown in fig. 9 and col. 8 including a preamble (start

bits), a binary ID code, and a CRC (checksum), but does not

10     specify "microcode."   Guest includes a unique 16 bit binary

codeword with start bit and parity.   Warren discloses microcode

for providing the instructions of the microcontroller (col. 4,

lines 46-50)  Therefore it would have been obvious to have

included the transmission instructions of Mufti in microcode

15     which is suggested by Warren to be an equivalent terminology for

the instructions of the microcontroller of Mufti.

Regarding claim 56, Mufti describes that the software

instructions of the microcontroller in the receiver provides for

validation of the received codes including the CRC shown in fig.

20     8 and col. 7. but does not specify "microcode."   Warren

discloses microcode for providing the instructions of the

microcontroller (col. 4, lines 46-50) including comparing and

validating access codes.   Therefore it would have been obvious to

have included the receiver instructions of Mufti in microcode

25     which is suggested by Warren to be an equivalent terminology for

the instructions of the microcontroller of Mufti.

Regarding claim 71, the receiver in fig. 8 of Mufti includes a microcontroller (82) which provides the validation and Warren teaches microcode as discussed above.

3.    Claims 66 and 68 are rejected under 35 U.S.C. § 103 as being unpatentable over US Patent No. 4,990,892 (Guest) in combination with US Patent No. 5,363,425 (Mufti) and US Patent No. 3,403,381 (Haner) and US Patent No. 5,206,637 (Warren) as applied above to claims 1, 49-65, 67 and 69 and further in view of the "Understanding Data Communications" book by Radio Shack.

The Radio Shack book describes using multiple bits per baud in order to increase the signalling rate on a channel with a limited bandwidth that causes a fixed maximum baud rate. This can be implemented by providing a dibit in which two bits a communicated by each modulated pulse or sine wave depending on the phase shift (position) of the wave as shown in table 5-4 or 5-6. Regarding claim 66, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have included a dibit in the combination applied above because the Radio Shack book states that this provides advantages such as an increased signalling rate.

Regarding claim 68, it further would have been obvious to have provided the dibit for the CRC for the same reasons discussed above.

**(12) *New ground of rejection***

This Examiner's Answer does not contain any new ground of rejection.

**(13)** *Response to argument*

Applicant's argument that the Mufti patent is non-analogous art is not persuasive.  Applicant's invention is directed to a locating and monitoring system for a person, animal or equipment and since Mufti is directed to a personal locating and asset tracking system it is clearly analogous art.  Applicant points out that Mufti differs from applicant's invention and then incorrectly concludes that this makes the reference non-analogous.  Because of these differences, Mufti does not anticipate applicant's claims, but the difference do not make the reference non-analogous and the combination of reference shows that these difference would have been obvious to one of ordinary skill in the art at the time the invention was made.  The examiner asserts that the other applied references are analogous and/or within the same field of endeavor because Guest and Warren are directed to locator systems and Haner and the Radio Shack book are directed to data communications which are considered to be within the field of knowledge of the artisan in the wireless locator art.  Further, Haner is directed to variation of response time to prevent interference or synchronization between a plurality of transmitters which is reasonably pertinent to the problem being solved by applicant.  Therefore the applied references comply with the determination analogous art set forth in In re Wood, 202 USPQ 171, 174.

The argument that unlike Mufti, "applicant's claims 49 and 65 call for the occurrence of each pulse burst in time relative

to the start of each time interval varying under the control of

the means responsive to the algorithm and using the unique binary

identification code of that transmitter to prevent

synchronization with other transmitters" is not persuasive.

5      Claim 49 includes language substantially similar to the above,

but claim 65 does not and therefore applicant's argument is not

commensurate with the scope of the claims.  Also, applicant is

reminded this rejection is based on a combination of references

and not on Mufti alone.  Varying of the interval is provided by

10     the "random" interval discussed below which when provided by a

software (algorithm) driven microcontroller as in Mufti is

considered to be provided by a means responsive to an algorithm

which also provides a binary ID code (92 in fig. 9) which

prevents synchronization or interference.

15          Applicant's argument with reference to Mufti asserts that

the applicants disclosure does not include "random" intervals for

burst transmission but is controlled by an algorithm which is the

opposite.  This is not persuasive.   Mufti discloses transmitting

at random intervals in col. 8 line 1 and since all the

20     transmitter functions in Mufti are provided by the

microcontroller (61) which operates on algorithms, then the

random interval is a variation of the response interval making

the microcontroller equivalent to applicant's means responsive to

an algorithm to control varying of the interval.  To separation

25     from other transmitters, each transmitter microcontroller would

require unique information for the random transmission which

would be in binary form and therefore present a unique binary

code.  Further, the random pulse generator of Haner provides

random pulses in a predetermined manner (recur periodically

within predetermined time limits in col. 6, lines 29-41) which is

5    equivalent to applicant's means responsive to an algorithm for

transmitting bursts at varying intervals for the same purpose of

preventing interference or synchronization of a plurality of

transmitters.  Haner discloses that many techniques for producing

random pulses are available.  One known technique is to use a

10   pseudo random number generating algorithm responsive to an input

code such as a seed.  Regarding the means responsive to the

algorithm being responsive to an address in memory, such is shown

to be obvious by Warren as applied in the rejection of claim 51.

In response to Applicant's argument that the Examiner's

15   conclusion of obviousness is based upon improper hindsight

reasoning, it must be recognized that any judgement on

obviousness is in a sense necessarily a reconstruction based upon

hindsight reasoning.  But so long as it takes into account only

knowledge which was within the level of ordinary skill at the

20   time the claimed invention was made, and does not include

knowledge gleaned only from the applicant's disclosure, such a

reconstruction is proper.  *In re McLaughlin*, 443 F.2d 1392; 170

USPQ 209 (CCPA 1971).

Regarding the argument that it is improper to select

25   features, to select features from the prior art to effect results

expected from these features is within the purview of 35 U.S.C. §

103.  See In re Skoner, 186 USPQ 80 (CCPA 1975).

In response to Applicant's argument that there is no suggestion to combine the references, the Examiner recognizes that references cannot be arbitrarily combined and that there

5     must be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references.  In re Nomiya, 184 USPQ 607 (CCPA 1975).  However, there is no requirement that a motivation to make the modification be expressly articulated.  The test for combining

10    references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art.  In re McLaughlin, 170 USPQ 209 (CCPA 1971).  References are evaluated by what they suggest to one versed in the art, rather than by their specific disclosures.  In re Bozek, 163 USPQ 545 (CCPA)

15    1969.  In this case, Haner discloses varying the response times of different transmitters to solve the problem of interference or synchronization which is the same problem solved by applicant. Where it is not practical to synchronize the multiplexing of the transmitters to particular time slots for each transmitter as in

20    Guest or where there are too many transmitters to provide separate time slots for each, the technique of Haner minimizes the probability that signals will collide.

Applicant's assertions that the references are non-analogous, that hindsight is used and that the references

25    themselves must provide some teaching of the combination are not persuasive for the reasons stated above.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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